

the issue of whether the preamble of a claim should be construed merely as a statement of intended use, or as a structural limitation. In Corning, the claim was directed to "an optical waveguide comprising" a cladding layer having a particular composition and a core having a particular composition and index of refraction. The Court wrote,

"No litmus test can be given with respect to when the introductory words of a claim, the preamble, constitute a statement of purpose for a device or are, in themselves, additional structural limitations of a claim. To say that a preamble is a limitation if it gives 'meaning to the claim' may merely state the problem rather than lead one to the answer. The effect preamble language should be given can be resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim."

The Court concluded that to read the claim to cover all types of optical fibers would be "divorced from reality," and that the claim preamble "does not merely state a purpose or intended use of the claimed invention."

In the present case, it is clear from the entirety of the specification that the invention addresses the problem of curling caused by differential shrinkage in multi-layered belts when in use in papermaking machines (see page 2, line 30 - page 3, line 21), and that what the inventors invented was not a belt per se, but rather an improvement in a belt structure that becomes meaningful only when the belt is a component of a papermaking machine. If the claims were directed to "a belt for use in a papermaking machine. . .," this would be a statement of intended use. The belt could be, for example, a belt connecting a driving motor to a roller through a set of pulleys. In this case, however, the claims

are expressly directed to a "papermaking machine," and they further recite a "path in the machine wherein the paper sheet is in parallel, juxtaposed relation to a surface of the belt." Under Corning, this language cannot be properly read out of the claims in order to find them unpatentable.

The history of this case supports the Applicant's position. In the parent case (Serial Number 09/366,828), claims identical to the present independent claims 3 and 6 were refused consideration because they were drawn to a non-elected invention. Those claims were found to be drawn to a non-elected invention because they were drawn to a specific machine, namely a papermaking machine, whereas the other claims, otherwise having nearly identical language, were directed to a "papermaking belt." Thus, in the parent case, the PTO accorded structural weight to the very claim language which it now considers to have no weight.

Even if the above-quoted language from claims 3 and 6 is accorded no weight, claims 5 and 8, recite a structural distinction, namely that the "rollers" have "cylindrical surfaces over which the belt travels", and "the belt has opposite parallel surfaces, one of which contacts the cylindrical surfaces of the rollers over its entire width." As shown by Machinery's Handbook, 15th Ed., 1954, particularly the diagram and table on page 876, a V-belt engages a pulley over which it travels by contact with the sloping sides of a groove of the pulley. The belt is always spaced from the bottom of the groove of the pulley, the bottom being the only cylindrical part of the groove. Note the left-hand figure on page 876, and also that the belt thicknesses in column 2 of the table are always less than the depth D in the right-hand column.

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For convenient reference, we enclose photocopies of the relevant amendment and final Office action.

The new claims 15 and 16 further add another element of a papermaking press, namely the "nip," and recite that the nip is "composed of a first element located in opposed relationship to said surface of the belt, and a second element in opposed relationship to said first element, the belt being movable between said elements, and said elements being sufficiently close to each other to apply pressure to a paper sheet on said belt." Again, even if the introductory language of claims 3 and 6 is accorded no weight, claims 15 and 16 should still be found patentable because they recite structure not present in Mashimo.

The side edges of power transmission belts, for example V-belts, are tapered in order to provide area contact with the sloping sides of a pulley groove, as depicted in Machinery's Handbook. There is no corresponding sloping area contact in a papermaking belt. Nor is there a curling problem in a belt-type power transmission. Accordingly, there is nothing in Mashimo, or elsewhere in the art of record, that would have made it obvious to form a tapered edge on a papermaking belt.

For the reasons set forth above, we respectfully submit that the subject matter of claims 3-8, 15 and 16 is neither anticipated, nor shown to have been obvious, by the art of record. Favorable reconsideration and allowance of these claims is requested.

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Enclosures:

- (a) Copy of currently pending claims, showing changes
- (b) Copies of Office action and amendment from parent application 09/366,328
- (c) Copy of title page and page 876 from Machinery's Handbook



*Copy of currently pending claims showing changes made by the accompanying amendment*

3. A papermaking machine having at least one belt for transporting a paper sheet along a path in the machine wherein the paper sheet is in parallel, juxtaposed relation to a surface of the belt, the belt comprising a base layer and a resin layer overlying or underlying the base layer when the papermaking belt is mounted on a papermaking machine, the resin layer having a middle part and opposite side edge parts, wherein the thickness of the opposite side edge parts of the resin layer is smaller than that of the middle part thereof, whereby curling of side edges of the belt is prevented by suppressing differential thermal contraction between the base layer and the resin layer.

4. A papermaking machine according to claim 3, wherein said belt is a belt from the group consisting of shoe press belts and transfer belts.

5. A papermaking machine according to claim 3, in which the papermaking machine includes rollers having cylindrical surfaces over which the belt travels, and in which the belt has opposite parallel surfaces, one of which contacts the cylindrical surfaces of the rollers over its entire width.

6. A papermaking machine having at least one belt for transporting a paper sheet along a path in the machine wherein the paper sheet is in parallel, juxtaposed relation to a surface of the belt, the belt comprising a base layer having opposite surfaces, a thin resin layer formed on one of the surfaces of the base layer and a thick resin layer formed on the other surface of the base layer, the thick resin layer having a middle part and opposite side edge parts, wherein the

thickness of the opposite side edge parts of the thick resin layer is smaller than that of the middle part thereof, whereby curling of side edges of the belt is prevented by suppressing differential thermal contraction between the base layer and the thick resin layer.

7. A papermaking machine according to claim 6, wherein said belt is a belt from the group consisting of shoe press belts and transfer belts.

8. A papermaking machine according to claim 6, in which the papermaking machine includes rollers having cylindrical surfaces over which the belt travels, and in which the belt has opposite parallel surfaces, one of which contacts the cylindrical surfaces of the rollers over its entire width.

15(new). A papermaking machine according to claim 3, comprising a nip, said nip being composed of a first element located in opposed relationship to said surface of the belt, and a second element in opposed relationship to said first element, the belt being movable between said elements, and said elements being sufficiently close to each other to apply pressure to a paper sheet on said belt.

16 new. A papermaking machine according to claim 6, comprising a nip, said nip being composed of a first element located in opposed relationship to said surface of the belt, and a second element in opposed relationship to said first element, the belt being movable between said elements, and said elements being sufficiently close to each other to apply pressure to a paper sheet on said belt.



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY DOCKET NO.
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EXAMINER
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ART UNIT	PAPER NUMBER
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DATE MAILED:

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

### OFFICE ACTION SUMMARY

ENTERED  
DUE 6-15-01

- ☐ Responsive to communication(s) filed on 11/13/2000
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extension of time may be obtained under the provisions of 37 CFR 1.136(a).

#### Disposition of Claims

- ☐ Claim(s) 1-10 is/are pending in the application.
- Of the above, claim(s) 1-10 is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☐ Claim(s) 1-11 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

#### Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

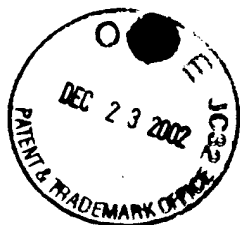
\*Certified copies not received: \_\_\_\_\_

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- ☐ Notice of Reference Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s) \_\_\_\_\_
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--



Application/Control Number: 09/366,628

Page 2

Art Unit: 1772

### DETAILED ACTION

1. Newly submitted claims 5-10 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 1-4 are drawn to a product, while claims 5-10 are drawn to a machine using said product. In the instant case the product as claimed can be used in a different machine, such as a tread mill belt.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 5-10 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

3. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by either Stanhope or Kawashima et al as presented in the last office action, mailed August 9, 2000.

4. Applicant's arguments filed November 13, 2000 have been fully considered but they are not persuasive.

5. In response to applicant's argument that the instant belt is for use in a paper making machine for transporting paper, a recitation of the intended use of the claimed invention must



Art Unit: 1772

result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

The argument as to the curling function at the end of claims 1 and 2, along with specifically naming the belts in claims 3 and 4 does not change the overall structure thereof and add patentability to the instant claims.

A claim drawn to a clear "process of using" may aid in distinguishing over the presently cited art, which is structurally the same as the instant claims.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

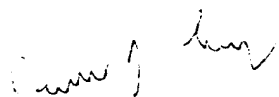
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Art Unit: 1772

Any inquiry concerning this communication should be directed to Ec. D. Loney at  
telephone number (703) 308-2416.



DONALD J. LONEY  
PRIMARY EXAMINER

Loney/af

March 14, 2001



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of  
N. Sakuma

Serial No.: 09/366,628

Filed: 08/03/99

For: PAPERMAKING BELT

Examiner:  
D. Loney

Art Unit: 1772

AMENDMENT

Assistant Commissioner for  
Patents  
Washington, DC 20231

Sir:

This is in response to the Official action of August 9,  
2000.

Please amend claims 1 and 2 as follows:

1(Amended). For use in a [A] papermaking machine  
having at least one paper transporting belt for transporting a  
paper sheet along a path in the machine wherein the paper  
sheet is in parallel, juxtaposed relation to a surface of the  
belt, a paper transporting belt comprising a base layer and a  
resin layer overlying or underlying the base layer when the  
papermaking belt is mounted on a papermaking machine, the  
resin layer having a middle part and opposite side edge parts,  
wherein the thickness of the opposite side edge parts of the  
resin layer is smaller than that of the middle part thereof,  
whereby curling of side edges of the belt is prevented by

CERTIFICATE OF MAILING  
UNDER 37 C.F.R. §1.8(a)(1)(ii)  
(PATENT)

I certify that this paper is being deposited on the  
date shown below with the United States Postal  
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and is addressed to "Assistant Commissioner for  
Patents, Washington, DC 20231"

Signed  
Date:

*[Signature]*  
Nov 8, 2000

suppressing differential thermal contraction between the base layer and the resin layer.

2 (Amended). For use in a [A] papermaking machine having at least one paper transporting belt for transporting a paper sheet along a path in the machine wherein the paper sheet is in parallel, juxtaposed relation to a surface of the belt, a paper transporting belt comprising a base layer having opposite surfaces, a thin resin layer formed on one of the surfaces of the base layer and a thick resin layer formed on the other surface of the base layer, the thick resin layer having a middle part and opposite side edge parts, wherein the thickness of the opposite side edge parts of the thick resin layer is smaller than that of the middle part thereof, whereby curling of side edges of the belt is prevented by suppressing differential thermal contraction between the base layer and the resin layer.

Please add the following new claims:

3. A papermaking belt according to claim 1, wherein said belt is a belt from the group consisting of shoe press belts and transfer belts.

4. A papermaking belt according to claim 2, wherein said belt is a belt from the group consisting of shoe press belts and transfer belts.

5. A papermaking machine having at least one belt for transporting a paper sheet along a path in the machine wherein the paper sheet is in parallel, juxtaposed relation to a

surface of the belt, the belt comprising a base layer and a resin layer overlying or underlying the base layer when the papermaking belt is mounted on a papermaking machine, the resin layer having a middle part and opposite side edge parts, wherein the thickness of the opposite side edge parts of the resin layer is smaller than that of the middle part thereof, whereby curling of side edges of the belt is prevented by suppressing differential thermal contraction between the base layer and the resin layer.

6. A papermaking machine according to claim 5, wherein said belt is a belt from the group consisting of shoe press belts and transfer belts.

7. A papermaking machine according to claim 5, in which the papermaking machine includes rollers having cylindrical surfaces over which the belt travels, and in which the belt has opposite parallel surfaces, one of which contacts the cylindrical surfaces of the rollers over its entire width.

8. A papermaking machine having at least one belt for transporting a paper sheet along a path in the machine wherein the paper sheet is in parallel, juxtaposed relation to a surface of the belt, the belt comprising a base layer having opposite surfaces, a thin resin layer formed on one of the surfaces of the base layer and a thick resin layer formed on the other surface of the base layer, the thick resin layer having a middle part and opposite side edge parts, wherein the thickness of the opposite side edge parts of the thick resin layer is smaller than that of the middle part thereof, whereby curling of side edges of the belt is prevented by suppressing differential thermal contraction between the base layer and the thick resin layer.

9. A papermaking machine according to claim 8, wherein said belt is a belt from the group consisting of shoe press belts and transfer belts.

10. A papermaking machine according to claim 8, in which the papermaking machine includes rollers having cylindrical surfaces over which the belt travels, and in which the belt has opposite parallel surfaces, one of which contacts the cylindrical surfaces of the rollers over its entire width.

#### REMARKS

As the Examiner has pointed out, conventional V-belts, such as those exemplified by Stanhope and Kawashima et al. are tapered and therefore correspond literally to the structural language of original claims 1 and 2. These V-belts are power transmission belts for transferring power from one rotating pulley to another in a belt which is narrower than a flat belt having a similar power-transmitting capability.

The reasons underlying the use of V-belts in power transmission do not exist in the shoe-press belts and transfer belts of papermaking machines. Moreover, the problem addressed by this invention, curling of edges of a belt due to differential contraction of its several layers, has not been a problem in V-belts for power transmission. For this reason, the Applicants' invention, as set forth in the amended and new claims, is neither anticipated nor shown to have been obvious by the cited art.

In the original claims, the terminology "papermaking belt," if interpreted broadly, could have been read upon a V-belt used for driving one or more of the rollers of a papermaking machine. The language of claims 1 and 2 has been amended to recite positively that the claimed belt is a "paper transporting belt" "for use in a papermaking machine." This language clearly distinguishes Applicant's belt from a power transmission V-belt that might be used in a papermaking machine, for example, to drive one or more of the rollers.

Claims 1 and 2, have also been amended to define the invention more fully in other respects. "Whereby" clauses have been added, referring to suppression of curling, to emphasize an important distinction between the Applicants's belts and the V-belts of the prior art. Claims 1 and 2 have also been amended to define the invention more fully by reciting that the papermaking machine in which the claimed paper transporting belt is to be used has "at least one paper transporting sheet for transporting a paper sheet along a path in the machine wherein the paper sheet is in parallel, juxtaposed relation to a surface of the belt."

New dependent claims 3 and 4 further distinguish the invention from the prior art by reciting that the belt is a shoe press belt or a transfer belt.

New independent claims 5 and 8 positively recite the papermaking machine as part of the claimed combination, the fact that the belt transports a paper sheet, and the fact that the paper sheet is in parallel, juxtaposed relation to a surface of the belt. These claims are submitted to be patentable for the same reasons as advanced above in support of claims 1 and 2.

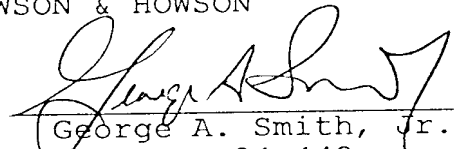
New dependent claims 6 and 9 are similar to claims 3 and 4.

Finally, new dependent claims 7 and 10 add a further distinction, namely, that the belt has opposite parallel surfaces, one of which contacts the cylindrical surfaces of the rollers over its entire width. In a V-belt power transmission, the pulleys are contacted only by tapered side surfaces of the belt. If the belt has a flat inner face, it is spaced from the bottom of the groove of the pulley in order to insure contact between the belt and the pulley only at the sides of the belt.

For the reasons given above, and in view of the amendments, it is submitted that claims 1-10 should be found allowable. Favorable reconsideration and the issuance of a notice of allowance are respectfully requested.

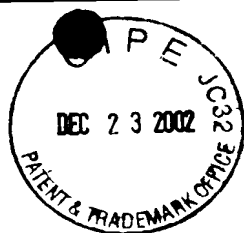
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# MACHINERY'S HANDBOOK

FOR MACHINE SHOP  
AND DRAFTING-ROOM

A REFERENCE BOOK ON MACHINE DE-  
SIGN AND SHOP PRACTICE FOR THE  
MECHANICAL ENGINEER, DRAFTS-  
MAN, TOOLMAKER, AND MACHINIST

BY

ERIK OBERG AND F. D. JONES

*FIFTEENTH EDITION*

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be rotated at least one turn to seat the belt or they may be rotated continuously at slow speed. The belt length is checked by the center-to-center distance of the pulleys on the fixture with a tolerance of plus or minus  $\frac{3}{8}$  inch. The original center-to-center distance on the fixture is determined by using an original sample belt of correct length. Belts are specified and marked by the S.A.E. size number and the center-to-center distance in inches between the pulleys as established with this standard testing or checking fixture.

**V-Belts for Industrial Applications.** — The five common sizes of V-belts used for miscellaneous industrial applications include both smaller and larger sizes than those in the S.A.E. standard; moreover, the widths and thicknesses of industrial V-belts differ more or less from those conforming to the S.A.E. standard. The sizes of industrial V-belts are commonly designated by the letters A, B, C, D and E, or by the use of these letters in conjunction with the belt width at the top and its thickness. For example, size A,  $1\frac{1}{2}$  by  $1\frac{1}{32}$  inch. The first dimension indicates the width at the top and the last one the belt thickness. The proportions of each of these

S.A.E. Standard V-Belts and Pulleys

Sides of groove must be free of tool marks and rough spots.

S.A.E. Belt Size and Nominal Top Width, Inch	Nominal Belt Thick- ness, Inch	Outside Diameter of Pulley, $\pm 0.010$ Inch	Pulley Groove Dimensions		
			Top Width W, Inch $\pm 0.010$	Angle A $\pm 1/2$ Deg.	Depth D, Min. Inch
38	38	3 and larger	0.625	28	$1\frac{1}{32}$
$1\frac{1}{16}$	$1\frac{1}{32}$	3 to 4 in., incl.* Over 4, to 6 in., incl. Over 6 in.	0.625	34 36 38	$\frac{5}{8}$
$\frac{3}{4}$	$\frac{5}{16}$	3 to 4 in., incl.* Over 4, to 6 in., incl. Over 6 in.	0.688	34 36 38	$1\frac{1}{16}$
$\frac{7}{8}$	$\frac{1}{2}$	$3\frac{1}{2}$ to $4\frac{1}{2}$ in., incl.* Over $4\frac{1}{2}$ , to 6 in., incl. Over 6 in.	0.813	34 36 38	$1\frac{3}{16}$
1	$\frac{9}{16}$	4 to 6 in., incl.* Over 6, to 8 in., incl. Over 8 in.	0.938	34 36 38	$1\frac{5}{16}$

\* In designing V-belt drives, these small-diameter pulleys should be used only in extreme cases because they reduce the power-transmitting capacity and belt life